The slides were processed in such a way as to make them nearly equivalent in over-all light intensity. Further, each slide met Hess' standard tolerance for bright-dark light contrasts (see Study B, to follow).

Except for one posed scene, the pictures were all taken from Ebony, a popular Negro weekly magazine. The pictures showed Negroes and whites in various social, work, and leisure situations, e.g., an interracial group of civil rights marchers, a Negro man showing his son a baseball, an older white man being cared for by a female Negro physician, a Negro boy and white girl talking on campus, a white girl and a Negro girl eating dinner together, a white woman seated and a very dark Negro man behind her with his hand on her shoulder. These 16 pictures were among a group of 40 photographs which earlier had been shown to two anti-Negro persons and two equalitarians. The 16 pictures chosen were ones which evoked the greatest difference in degree of dislike from the anti-Negro and equalitarian persons.

Data Collection. Nineteen subjects were tested. Twelve were known to have essentially equalitarian attitudes toward Negroes. Of the twelve, two were Negroes, six had at some time been identified with the civil rights movement (two of the six had been jailed for these activities) and four were known by the investigator to hold equalitarian views. Of the twelve, half were males. Seven subjects were known to have strong anti-Negro attitudes. Of these, three were male and four female. They were chosen on the basis of their scores on a self-report attitude inventory (Multifactor Racial Attitude Inventory).

Hess' (1965) technique was followed. The subject looked through the pupillographic apparatus at a rear projection screen on which the stimulus pictures were presented. A control picture was presented first, followed by a Negro content picture. Each picture was projected for ten seconds. Meanwhile a motion picture camera recorded pupillary changes of the left eye at a rate of two frames per second.

A month later the subjects were contacted again and asked to return for retesting. Of the 19 subjects, 17 were retested. One subject had left the country, another would not return. The retest procedure was the same as that used initially.

Data Analysis and Results. The pupillographic film record was projected and scored in a special apparatus. The pupil image was measured and magnified about 20 times its actual size. The scorer chose a convenient diameter and measured each frame with a millimeter rule. For purposes of analysis the average pupil diameter during the presentation of a Negro content slide was compared with the control slide period preceding it.

Of major interest is the difference between the anti-Negro and equalitarian subjects on mean per cent of pupil change over the 16 attitude-related stimuli. With rare exceptions the pupil diameter was larger for critical than for neutral stimuli. Moreover, the two groups did not differ either on the first or the second testing.

A comparison of the first and second testing provided stability data. The reliability of the mean per cent of pupil change was 0.59 (N=15). Within-subject test-retest reliabilities were also computed. They ranged from -0.38 to 0.74 across the 16 stimuli. The average intra-subject reliability over the 16 stimuli was 0.30.

d. Methodological Problems

In the course of Pilot Study A a number of methodological problems became apparent. Since an attempt was made to take account of these in subsequent research, they are described here. Woodmansee (1966) has published a description of these problems under the title, "Methodological Problems in Pupillographic Experiments."

Light Reflexive Effects. In Hess' (1965) experiments with visual stimuli an emotionally neutral control picture was shown before each test picture. The pupil response (PR) was the change in pupil diameter from the presentation of the control picture to the presentation of the succeeding test picture, expressed as a percentage of pupil diameter during the control period. Control of the light reflex was as follows: (a) the control and test pictures were equated for overall brightness; (b) by a special photographic technique the brightness contrasts in the test pictures were reduced to a minimal level without the loss of important details. In this way the constriction effect of looking from a dark to a relatively brighter area in a test picture was minimized, but as Loewenfeld (1966) suggested the effect is still a significant influence. In one study using photographic stimuli, it was found that the pupil constricted 1%-5% when S's gaze was shifted from a relatively dark to a brighter area of a test stimulus prepared according to Hess' illuminance standards. The potential influence of the light reflex is sizable considering that reflex dilation responses to emotion-arousing stimuli generally average less than 5% of pupil diameter (e.g., Hess, p. 49). The problem is alleviated if it can be assumed that (a) individual differences in the extent of the light reflex (which are great) are randomly distributed in test groups and (b) an S's light-sensory experience is not systematically related to his psychological reaction to the stimuli. In the latter case an S might constrict to a test picture he did not like simply because he looked at an area of the picture that was brighter than the control stimulus.

An obvious solution is not to use visual stimuli; but if they are necessary, a short visual-effects test is suggested. In our laboratory a checkerboardlike picture was prepared so that each of the gray and white squares was an area about the size of the largest gray or white areas of the test pictures. Further, the squares were in illuminance as dark or bright as the darkest and brightest areas of the test pictures. This stimulus was presented to each S eight times with counterbalanced instructions to look either at a specified gray or white square. The average constriction from looking from gray to white squares was computed for each S, and test-group means were then compared to check for random distribution of individual responses.

To check on the possibility that Ss in any test group had, on the average, larger or smaller pupils simply because they looked at dark or bright areas in the test pictures, Ss were asked to identify what they looked at during the course of the experiment. Later, with the pictures projected as Ss had viewed them, spot-photometer illuminance readings were taken from the areas mentioned. The test groups were then compared with these data to determine whether they differed in their self-reported average light-sensory experience.

Arousal Decrement Effect. The pupillary muscles are under the influence of autonomic innervation wherein sympathetic, parasympathetic, and supranuclear mechanisms are simultaneously active to varying degrees. Specific reflexes are superimposed on this constantly shifting basic equilibrium (Loewenfeld, 1958). If the general level of autonomic activity increases by sensory or emotional stimulation, or by spontaneous thoughts, the pupil widens. Pupil size decreases with decreasing arousal accompanying loss of interest, boredom, or falling asleep.

In experiments wherein several control-test stimulus pairs are presented, and the basic datum is the relative change in pupil size from control periods to test periods, it cannot be assumed that basal pupil size reflected in control-period reactions remains constant throughout the experiment. Typically, control-period pupil size increases rapidly when the first few control-test pairs are presented, then decreases somewhat less rapidly as S adapts to or becomes less interested in the experiment itself. It has been found that this transiency in basal pupil size due to arousal changes can easily account for a 2%-3% dilation or constriction (actually dedilation) when comparing pupil diameter during a control period and its subsequent test period.

As a general rule alert Ss demonstrate rapid decrease in arousal after about 100 sec. of exposure to stimuli, so lengthy trials should be avoided. Tired Ss show this arousal decrement even sooner. The order of presentation of the stimuli should be varied within test groups to randomize arousal increment

and decrement effects across stimuli. Finally, if the PR for each test stimulus is based on the pupil size during the control periods both before and after the test stimulus the comparison of control and critical PR is thereby corrected for basal changes.

Effect of the Near-vision Reflex. With light stimulation constant there is a constriction of the pupil which coincides with convergence of the eyes and accommodation of the lens upon viewing a near object. Individuals vary greatly in terms of how close the near focusing must occur before the constriction effect begins to operate. In general, however, the older the person, the more pronounced the effect at a given distance. The extent of this problem was noted in the responses of a 50 year old male S to stimuli presented at a distance of about 80 cm. from the eye. The S was shown several pairs of control-test pictures. His PR to the test stimuli early in the series was the typical dilation response as he retained a focus on both control and test pictures. After several pairs he focused only on the test pictures and allowed his vision to blur on the controls (i.e., focusing nearer than the plane of projection), and this resulted in constriction responses of 10%-30%.

This problem may be minimized by using only Ss less than 30 years old, and by presenting the stimuli at a distance from the eye such that an S has no difficulty retaining his focus for the required period (3-4 m. is generally sufficient).

Problem of High Pupillary Variability. In diffuse light the pupil is in a constant state of "unrest." Pupillary diameter can be expected to change at least 1% from second to second and often as much as 10%-20% over a period of several seconds. For an S exposed to a control picture, these irregular and uncontrollable oscillations are generally as variable or more variable than during test-stimuli periods. The high degree of variability in the pupil reaction makes reliable measurement very difficult. Test-retest reliability is generally about .30 in single-trial designs used in studying psychosensory phenomena. With reliability this low, the need for caution in interpretation of findings is obvious.

Hakerem and Sutton (1964) in their study of psychosensory phenomena used a repeated measures design to deal with pupil variability. Woodmansee (1965) using an eight-trial design found that odd-even trial reliability was .43. There is evidence, however, that averaging the pupil response across repeated trials, while increasing reliability, may be inappropriate in the sense that it may mask changes in response during the course of the experiment.

Other Problems. In addition to methodological problems discussed above, there are other technical matters to be considered

in the design, execution and interpretation of pupillographic experiments. For example, the location of the mirror reflecting the image of the eye to the camera is of considerable importance in preventing distortion of the image. Since the work of Hess and his associates has created considerable interest in pupillographic work, a review article is being prepared (by Woodmansee) to serve as a guide to others who are planning studies. Topics to be covered by the article are as follows: historical perspective on pupillary research, neurological and ophthalmological considerations, apparatus design, preparation and presentation of stimuli, control of extraneous stimuli, scoring problems, significant subject variables, and suggestions regarding the solution of methodological problems.

e. Study B

As reported on Pilot Study A we found nothing in our exploratory work to encourage us to continue. On the other hand, as is made clear from the description of methodological problems encountered, it seemed possible that our lack of positive findings had been due to methodological difficulties. In addition, Hess reported that constriction to unpleasant stimuli occurred only after three to five 10-second presentations of the aversive stimulus. On the earlier presentations dilation had been observed.

For these reasons we decided to carry out a second study. A major change from the earlier study was to repeat the stimuli enough times to provide an opportunity for constriction to occur later in the presentation sequence. We chose eight presentations to be sure to cover the period of transition to which Hess had called attention. Some modifications in technique were made; these will be described below. Otherwise the study was basically similar to Pilot Study A in that equalitarian and anti-Negro subjects were shown pictorial stimuli expected to arouse unpleasant affect in the anti-Negro subjects.

Apparatus. The apparatus was essentially similar to that described in Pilot Study A. One major change was made. The translucent screen was removed from the back of the pupillograph box, allowing the subject to look through the box at a screen in the distance. A paper screen was positioned 3.6 meters from the subject's eyes and the pictorial stimuli were projected on this screen. This change was made to take account of the danger, mentioned in the methodological discussion above, that constriction would take place as a result of refocusing the eyes on a near object following blurring or loss of focus while a control slide was being shown.

Development of Pictorial Stimuli. Six black and white slides were used to project the pictorial stimuli. One of

these was the "control" picture used by Hess. It had a plain white background with the numbers one through four in the corners and five in the center. Four of the pictures were related to racial attitude. Two of these had been rated as disliked by a group of 23 introductory psychology students selected at random. One of these pictured an extremely slovenly Negro man. The other pictured an interracial couple - a Negro man seated with a white woman standing behind him. She had her arms around him while they looked at some papers. Two of the pictures containing Negroes had been rated as liked by this same group of students. One of these showed a young white and a young Negro boy playing together. The other showed a Negro performer together with a group of other well-known entertainers, some white, some Negro; all are laughing. The sixth picture was meant to arouse strong negative feeling in all of the subjects. This picture was of a filthy toilet in a broken down wash room.

All slides were prepared according to Hess' technique and following his illumination standards. The overall brightness of all slides was kept at the level he uses. This level was set with the same light meter he employs, the Gossen Lunasix Meter. Moreover, in terms of his standards the six slides did not vary from one another in overall brightness by more than .5 units as measured by this meter. Hess' control standards for stimuli also call for control of dark-light contrast within each slide. His standard here is that the lightest point in a slide should vary no more than .5 units from the darkest--as measured by a Pentax spot photometer.

Data Collection. The subjects were 22 white female undergraduates. Eleven subjects had, in previous testings, expressed strong anti-Negro sentiment on a self-report attitude inventory (the Multifactor Racial Attitude Inventory). The scores for the anti-Negro subjects fall in the most anti-Negro quartile of attitude scores from 536 students tested in 1963-64 at the University of Colorado and Colorado Women's College. The other 11 subjects were persons who had been identified with pro-civil rights activities (e.g., membership in CORE, participation in civil rights protests, volunteer work in biracial projects, and marriage to a Negro).

Subjects were given a visual acuity test to provide assurance that they were able to see the stimuli clearly. They were also given tests to determine the extent of their light reflexive pupil changes in response to variations in brightness in the slides used. These tests were made with two special checkerboard slides made up of light and dark squares. The overall brightness of one of these slides was somewhat greater than the other; the difference between the two equaled the difference between the least bright and most bright slides of the six used in the experiment. Within each of the two slides the difference between the light and dark squares equaled the difference

between the lightest and darkest areas in the pictures in the critical slides. Using these slides it was possible to show that the light reflexive reactions of the two groups of subjects did not differ for the range of brightness used in the critical slides. Individuals, of course, do differ in this respect from each other.

Each subject was shown the four Negro-content pictures, the toilet picture and the control slide. Each content slide was preceded by the control slide. The order of presentation varied from subject to subject and within subjects from presentation to presentation. After all five of the content pictures had been seen at least once, the subject made ratings on interest and affect for each picture including the control. When the ratings were completed the subject returned to the pupillograph for the remaining seven presentations. At the end of the stimulus presentations the subject rated the stimuli a second time on the affect and interest value scales. When the subject had completed these ratings she was asked to recall what parts of each picture were looked at most. As noted in the methodological section above, it could happen that subjects who dislike a picture might look at lighter portions of it and for this reason show constriction (or less dilation) than subjects looking at darker portions of the same picture. Fortunately, the two groups of subjects being compared in this study were quite similar to each other in their reports of the parts of pictures at which they looked most. When the brightness level of these areas was averaged for the two subject groups no difference was found.

Data Analysis and Results. When the two attitudinal subgroups are compared in terms of their pupil change from control to content picture, using data from all eight presentations of the slides, no differences are found. This is true of the individual Negro-content pictures as well as for any combination of them. Average changes to all content slides are characteristically in the dilation direction. This is also true of the pupil change in response to the toilet scene, although the eleven anti-Negro students taken as a group respond to this scene with an average change of 2% in the negative direction.

If one limits himself only to the data from the first presentation the outcome is somewhat different. Here when the four Negro-content stimuli are treated together there is a significant difference ($p < .01$) between the two subgroups, with the equalitarian subjects showing the greater dilation, 2.65% against -0.10% for the anti-Negro subjects. Also, if one combines only the three Negro-content stimuli to which the equalitarian subjects had given a higher rating for "liking" than had the anti-Negro subjects, the difference between subgroups becomes even greater, 3.37% for the equalitarians vs. 0.37% for anti-Negro subjects ($p < .01$).

In the methodological discussion above it was pointed out that the pupil diameter becomes gradually less over a period of time in a test situation. For this reason it seems best to compare the pupil diameter for an experimental slide with the average pupil diameter for two control slides, one before and one after the experimental slide in question. When this procedure is used to reanalyze the data, the differences reported above all disappear.

It might be true, of course, that different subjects even within the same subgroup react with different degrees of negative affect to different stimulus pictures. An aspect of the experimental procedure called for the subjects to make ratings of the degree to which they liked or disliked each of the five pictures. The pupillary change scores may be correlated with these ratings. When this is done, using the data from all eight presentations, the correlation is .01. When the data from the first presentation only are used the correlation is .24. In neither case is the relationship high enough to be encouraging. An article describing these results is being prepared by Woodmansee for publication in Science.

f. Study C

In view of the potential importance to our attitude research program of the work reported in Study B we decided to repeat this study, with some modifications, on southern college students. This was done at Wake Forest College in North Carolina.

Apparatus. The apparatus used was identical to that described in Study B.

Development of Material. Pictures similar to those in Study B were used. There were four attitude-related pictures. One was an intimate picture of an interracial couple, a Negro man and a white woman, cheek-to-cheek and smiling. A second picture was of two slovenly Negroes, one man and one woman, both apparently drunk. A third was of a young Negro boy and a young white boy lying peacefully together on the floor of a living room. The fourth picture was of a well-dressed Negro man sitting quietly at a table on which there was a bottle of liquor.

Two other pictures were included to provide a basis for comparison with the attitude-related pictures. These pictures were selected to be pleasant and unexciting. One was of a seascape with gulls flying over the seashore. Another pictured a cat and dog sitting together. The final slide was the Hess control slide already described. All slides were made according to the brightness and contrast standards recommended by Hess and described in earlier studies.

Data Collection. The subjects were 20 Wake Forest College students, half of whom were male and half female. Ten of the students were selected from the upper quintile of a distribution of Wake Forest students on a self-report attitude inventory (Multifactor Racial Attitude Inventory) and were clearly equalitarian. Ten were selected from the lower quintile and were clearly anti-Negro. All subjects were shown each slide 15 times with rest periods between each series of presentations. A content slide was preceded and followed by the Hess control slide. Only presentations 1, 2, 5, 10, 14 and 15 were photographed; however, the subjects did not know this. The basis for using this lengthened series of presentations was an observation made in Study B. The data of that study suggested a movement in the direction of constriction on the latter two of the eight presentations used.

After the 15 presentations were concluded subjects rated all pictures for the amount of affect they had experienced when shown the picture. As expected, anti-Negro subjects gave clearly stronger ratings of dislike to three of the Negro-content pictures than did the equalitarian subjects. On the fourth picture, that of the two slovenly Negroes, the dislike ratings were equivalent for the two subgroups.

Analysis of Data and Results. Again no evidence of pupillary constriction was found. Nor did the two subject groups differ in their reactions to the Negro-content pictures.

Data were analyzed separately for each of the six presentations photographed. Both subject groups showed dilation responses to the attitude-related Negro pictures. The order of magnitude was 6% to 7% on the average for the early presentations and 3% to 6% for the later presentations. (See discussion of arousal decrement in the methodological section above). Dilation reaponses were still occurring for both anti-Negro and equalitarian subjects on the 14th and 15th trials. No difference between subgroups was found on any trial. Nor were there any observable trends in this direction. The results were similar for all pictures considered individually.

Reactions to the non-Negro slides were also analyzed. The results were similar to those above. The only difference was that the degree of dilation to the non-Negro slides seemed somewhat less although not markedly so.

g. Study D

The purpose of this study was to attempt another test of the hypothesis that persons react to negative emotional states with pupillary constriction. In view of our failure to demonstrate this with pictorial material related to racial attitudes we decided to choose other material where we could be more

certain of the emotional impact.. A gruesome murder of a college girl occurring in the early summer of 1966 on the campus of the University of Colorado provided an opportunity for such a study.

Apparatus. The apparatus described in earlier studies was used in this study.

Development of Materials. It was possible to obtain a photograph of the room in which the murder took place. The photograph had been taken at a point in which the room was still in the condition of disarray in which it had been found following the murder. Since the local newspapers had carried full details for a considerable period of time we had every reason to think that with the picture we could reinstate, particularly in female subjects, the feeling of horror experienced by persons who were in Boulder at the time. Some preliminary exploration substantiated the fact that the picture served to bring back the strong feelings occurring at the time of the murder.

The picture was made into a slide with the usual considerations for overall brightness and contrast between light and dark areas which have been described in Pilot Study A, Study B and in the discussion of methodological problems. A control slide was made from a picture of another room, furnished in a commonplace and uninteresting manner.

Data Collection. Fourteen subjects were selected from among the group of female college students who were present in Boulder when the murder occurred. The critical picture was shown to the subjects nine times. Each showing was preceded and followed by the control picture of the second room. The nine repetitions were arranged in sets of three each. Following each set of three showings the subjects were allowed to examine the pictures at their leisure. In this manner we hoped to facilitate the transition, which Hess describes, from a state of arousal (producing dilation) to a state of aversion (producing constriction).

Following the experiment the subjects were asked to describe their feelings when viewing the photograph of the murder room. Eight clearly reported a revival of their emotional disturbance. Six were less clear, reporting also boredom, lack of interest, etc. The two subgroups were treated separately in the analysis.

Data Analysis and Results. Again no constriction was found. Nor were there any differences in degree of dilation between the two subgroups differing in degree of reported rearousal of emotional feelings.

The degree of dilation to the first presentation of the murder room picture was significantly different from zero in each of the three sets of three presentations each. The order of magnitude

was 1% to 2% dilation. The degree of dilation was not significantly different from zero on the third presentation in each set. Occasionally, the difference was significant on the second presentation.

h. Study E

Our inability to find evidence of constriction using attitude-related visual stimuli led us to consider the possibility of using auditory stimuli instead. As we have indicated in the discussion of earlier studies the use of visual stimuli presents difficult technical problems. There are many sources of potential influence upon pupil size in a situation in which the nature of visual stimulation is changing. The use of an unchanging and homogeneous visual field should minimize, if not eliminate, many of these technical difficulties.

Although Hess has not reported evidence of constriction with auditory stimuli he has described work in which the pupil dilation to visual stimuli was changed by verbal material. The pictures he used were of presidents and presidential candidates. He photographed the pupil reaction of three groups of people to five different photographs of President Johnson and five of Goldwater along with a single photograph of former Presidents Kennedy and Eisenhower. One group then read anti-Johnson material, another read anti-Goldwater material and the third read from excerpts from a psychology journal that had no political content. Then each group was retested. The people who read anti-Johnson material showed a slightly smaller response than before to Johnson and a slightly larger response than before to Goldwater. Extremely anti-Goldwater material had a different kind of effect. While it caused the expected decrease in response to Goldwater, it also caused a large drop in response to Johnson and even Eisenhower. The only person unaffected was Kennedy. Hess concludes that this may indicate that bitter campaign propaganda can lower a person's attitude toward politicians in general. He believes that Kennedy was spared for obvious reasons.

There would seem to be no objection to using auditory stimuli to produce the emotional reaction presumably responsible for pupillary change. The arousal of both positive and negative emotions through the use of words is familiar in everyday experience.

Given these considerations, we decided to carry out our next study with verbal stimuli presented orally to the subject.

Apparatus. The apparatus used was similar in most respects to that described in Study B. It consisted of the Hess pupillograph with the translucent screen removed from the back in order to permit the subject to look through at a paper screen approximately nine feet away. In the center of the screen was a geometrical design drawn with thin lines to provide the subject

something upon which to focus. The overall brightness of the area at which the subject looked was kept equivalent to that used in the visual stimuli prepared by Hess and duplicated in our laboratory in previous studies. The verbal stimuli (two-word phrases to be described below) were presented by tape recorder. This recorder was wired to a small bulb on the recording camera. When a phrase was sounded on the tape recorder this bulb flashed momentarily providing light through an aperture in the camera sufficient to expose one frame on the roll of film. This enabled scorers to separate the 18-20 frames associated with one stimulus from the following 18-20 associated with the next.

Development of Verbal Stimuli. It seemed desirable to have the verbal stimuli roughly comparable in the speed with which their meaning was conveyed to the subject. This would make the photographs taken in a 10-second period following stimulus presentation comparable in the sense that they follow by a roughly equal amount of time the onset of the different stimuli.

We chose two-word phrases as the best compromise between meeting this requirement and providing enough words to convey a range of emotional meaning. Seventy-five such phrases were composed. The intent was to make 25 of them as pleasant as possible, 25 as neutral as possible and 25 as unpleasant as possible. A rating study with college girls as subjects was carried out. Twelve phrases resulted from this study. The modal rating for four of these was the most positive rating possible on a 13-point rating scale. These four were moonlit beach, loving father, warm embrace and devoted husband. Four were given modal ratings of seven, the mid-point of the rating scale. These were plastic cup, white string, yellow pencil and paper bag. Four were given modal ratings of one, the extreme negative end of the rating scale. These were strangled child, burned flesh, bloody rape and rotting corpse. These phrases were read into a tape recorder at 10-second intervals with a standard intonation. Each affective phrase (positively or negatively) was preceded and followed by one of the neutral phrases. An order of positive and negative stimuli was arranged that made it difficult to predict which type of phrase would appear next. There were six repetitions of the affective phrases. A rest period was allowed following the series of phrases making up each of the six presentations. An adaptation period, incorporating several neutral phrases, preceded the beginning of each presentation of critical phrases. In order to increase the probability that each subject had similar associations to the phrases used, a series of descriptive paragraphs were prepared; each attempted to give a graphic description of the phrase in question. The phrase describing rotting corpse reads as follows:

> "Pieces of rotting skin fell to the ground as the attendant sank his fingers into the crumbling flesh and lifted the body onto the stretcher. A teeming clump of white worms marked the place the body had lain."

These paragraphs occurred at the beginning of the tape. The subjects pupils were photographed while the paragraphs were being read.

Data Collection. Ten female college students were used as subjects. These were persons similar to those that participated in the rating experiment on the basis of which the two-word phrases had been chosen. Each subject was photographed while listening to the tape described above.

Following the experiment each subject rated the 12 phrases on a seven-point scale ranging from very unpleasant to very pleasant. Mixed in with the experimental phrases were 12 new phrases which had been given roughly equivalent ratings in the original rating study. The purpose of this final rating was to determine whether phrases which had been repeated six times in the course of the experiment would continue to be reported as comparable in affect to 12 similar phrases which were being heard for the first time. The results of these post-experimental ratings showed that the experimental phrases continued to be rated as extremely positive, extremely negative, and neutral, and did not differ in rated affect from the 12 phrases which had not been used in the experiment.

Data Analysis and Results. A score for each presentation of each of the eight positive and negative phrases was derived by dividing the diameter of the pupil by the average diameter of the pupil in response to the neutral phrase preceding and the neutral phrase following the affective phrase in question. The result was expressed in terms of the usual per cent increase or decrease of the pupil size to the critical stimulus over the pupil size to the neutral stimulus. Means for the positive phrases and for the negative phrases, for each subject and over all 10 subjects were computed for each presentation.

None of these means is significantly different from zero. The means for 10 subjects for all six presentations are positive (showing dilation) for positive phrases. Four of the six means for negative phrases are positive. The two which are negative barely differ from zero, one being -.54% and the other being -.03%. Inspection of the means for individual subjects within each of the six presentations taken separately reveals no consistent tendency for selected individual subjects to show constriction responses to negative phrases and dilation responses to positive phrases.

On the other hand, if one looks at the results in terms of the means for the first three presentations against the means for the last three presentations a small trend may be observed in the direction expected from Hess' report of constriction to aversive stimuli on later presentations. On the first three presentations the mean response to positive phrases is almost identical to the mean response to negative phrases, both representing a dilation of approximately three-fourths of one per cent. However, if one examines the picture for the last three presentations the mean for positive phrases is .94%, while that for negative phrases is -.19%.

While these differences are very probably random in character the fact that the trend is in the expected direction requires that we obtain additional subjects to determine whether it holds up. An additional group of 10 subjects will be studied in the Fall of 1966.

i. Work Proposed

The overall impression created by our studies of pupillary change is that it is highly unlikely that this phenomenon will represent a reliable physiological indicator of attitude. We have found it impossible to produce responses which can be interpreted as constriction. Moreover, we can detect no differences in degree of dilation to attitude-related stimuli on the part of subject groups known to contrast sharply in racial attitude. Unless we receive some encouragement from the follow-up work on Study E above, it would seem unprofitable to continue research along this line. As noted in the introductory discussion of pupillary change the advantage of this phenomenon as a physiological indicato. rests entirely upon the possibility that it is bi-directional in character. Should this prove not to be the case it would be wiser to use physiological indicators such as GSR, heart rate and vasoconstriction which are more feasible to measure reliably in the average laboratory.

B. Generalization of Conditioned Evaluative Responses

a. Background

Much work has been done in the field of learning on the generalization of conditioned responses. In the area of attitude, Volkova (1953) has reported that a subject who has been conditioned to salivate in response to "good", will salivate in response to statements that seem to him to represent something good but not in response to statements suggesting something bad, even though the words "good" and "bad" are not used in the statements. The intensity of the response is taken as an indication of the extent to which a subject considers the statement good.

b. Work Proposed

We plan to adapt this technique to the study of attitude toward social groups, using vascular constriction (which is more easily measured than salivation) as the response. The response will first be conditioned to a stimulus with clear evaluational significance (e.g., "good"); after conditioning has been established, statements relevant to the attitudinal object will be presented. As a check on the reliability of the results, we plan to use two different evaluational dimensions (e.g., "good-bad," "desirable-undesirable"). Each subject will be conditioned in one session to the positive end of one of these dimensions (e.g., "good"), in another session to the negative end of the other dimension (e.g., "undesirable"). The test statements, responses to which will provide the basis for inference about attitude, will be the same in the two sessions, and will consist of descriptions of states of affairs that can be seen as good or bad, depending on the respondent's attitudinal position. To the extent that the test is reliable, items to which there is maximum response when a subject has been conditioned to the positive evaluative term should evoke minimum response when he has been conditioned to the negative term.

8. Measures Based on Verbal Self-Reports

Most investigators infer social attitudes from introspective self-descriptions provided by the S. Whether the S presents his views in response to open-ended interview questions or in structured questionnaires, little doubt exists that he can present an inaccurate view of himself; this may be in response either to his expectations of what other people feel to be desirable, or to his own values with respect to what is just and proper. The major focus in this research program is directed at finding a variety of indicators of social attitude less subject to influences of the sort to which self-report measures are susceptible. Nevertheless there are several reasons for continuing to work with such measures as an aspect of the program.

Outline

A. Multifactor Racial Attitude Inventory

B. Susceptibility of Multifactor Racial Attitude Inventory to Faking

C. Empathic Reactions

D. Reactions to Discriminatory Practices

E. Derogatory Beliefs

F. Pro-Negro Generalizations

G. Interviews

H. Differential Social Distance

I. Forced-Choice Inventory

A. Multifactor Racial Attitude Inventory

a. Background

For some years it has been customary for psychologists to describe an attitude toward a social group as composed of three aspects or components--cognitive, affective, conative (policy orientation) (e.g. Smith, 1947; Kramer, 1949). This way of looking at the attitude construct has become so common as to find its way into general psychology textbooks (e.g. Kimble & Garmezy, 1963).

Efforts to measure attitude, on the other hand, have not been influenced by the three-component analysis of the construct. In his chapter, Attitude Measurement, in the Handbook of Social Psychology, Revised Edition, Scott (in press) does not mention it. Hence, the three-component orientation to attitude, although widely accepted, remains, from the point of view of measurement, a matter of speculation.

A first step toward bringing theory and measurement together was taken by Collins and Haupt. Conventional Negro content items were compiled and sorted on an a priori basis into three categories. Statements of belief about Negroes were considered cognitive items, statements of feelings about Negroes and willingness to participate with Negroes (social distance items) were designated as affective items, and statements of policy toward Negroes as a group (items with a "should" or "ought" verb form) were called conative items. Within each category an attempt was made to cover a broad range of content. However, when the items were factor analyzed little support emerged for the three-component idea. Instead four content-defined factors were found. One factor has to do with policy toward integration of the races, another with racial equality and two others with the nature of social relationships into which the respondent is willing to accept Negroes.

b. Purpose

With the Collins-Haupt work as a beginning we have conducted three extensive studies of the organization of verbally-expressed racial attitudes. These studies, conducted in sequence over a period of three years, had two objectives. The first was to extend the search for components of racial attitude. The second was to prepare satisfactory subscales for the measurement of each such component. The methods by which we proceeded are described below, study by study. The results of the studies will be presented in a single discussion.

c. Study A

The first objective of Study A was to replicate the Collins-Haupt analysis. The second was to extend an inquiry begun in that study into a subscale which might serve to detect those individuals who respond falsely in the unprejudiced direction, i.e. who represent themselves as having more favorable attitudes than is in fact

the case. In addition to 60 attitudinal items, the Collins-Haupt inventory contained 40 statements intended to contribute to this subscale. In their factor analysis Collins and Haupt differentiated two types of items among these 40 statements. They identify one type as involving the denial of ambivalence or self-consciousness in situations which typically make whites feel uncomfortable, regardless of their attitude toward Negroes, e.g., "I probably would feel somewhat self-conscious dancing with a Negro in a public place." The second type assigns to Negroes as a group certain personal attributes which would make them superior to whites, e.g., "The Negro must possess deeper moral strength than the white man since he has come as far as he has in the face of far greater obstacles." As it turned out most of the items in this second, or "overfavorableness", category are keyed such that an "agree" response increases the respondent's "overfavorableness" score. Of the several factors which Collins and Haupt described, only "overfavorableness" showed this potential confounding with acquiescence response set. We undertook to eliminate this difficulty by adding 20 statements of the "overfavorable" type in which a "disagree" rather than an "agree" response would be the overfavorable choice.

Procedure and Subjects. The revised 120 item inventory was administered following several indirect measures of attitude toward Negroes (see Selltiz, Edrich & Cook, 1965). The subjects were paid for their participation. They were 593 white college students of U.S. citizenship from three geographical areas; Northeast, Midwest, and border South. They were selected so as to represent a wide range of racial attitudes. 159 came from pro-integration organizations while 192 belonged to anti-Negro groups: right wing political clubs or racially exclusive fraternities or sororities. Another 242 were recruited through classes, through advertisements in college newspapers and through announcements in college dormitories. Subjects were informed that their personal opinions were to be assessed as part of an extensive program of research on opinion measurement techniques.

Analysis. Following the strategy of the Collins-Haupt study we factor analyzed the 120 item inventory. To be consistent with that study, a principal axes solution was used in factoring the correlation matrix with unities in the diagonal, and the first seven factors were rotated to a varimax solution.

d. Study B

The objectives of Study B were two-fold. The first was to test, through a second factor analysis, our interpretation of the meaning of the factors identified in Study A. Based on the Study A results we first chose 51 of the items from the 120-item inventory. Of the deleted items, most proved to be redundant in content and their contribution to the variance could be taken care of by the items retained. A few other items had low loadings on all of the

Study A factors and were dropped for this reason. Together these omissions made way for 42 new items. In choosing new items, our intention was to have as broad a sample of item content as possible. Accordingly, the literature on verbal measures of attitude was reviewed for useful items (e.g. Hinckley, 1932; Kramer, 1949; Fishbein, 1961; Triandis, 1964).

The second objective of Study B was to broaden our work to include examination of the factor structure of another group of attitude measures--those produced by Harding and Schuman. The work of these investigators represents a major attack on the components of attitudes toward minority groups and, hence, it seemed highly desirable to integrate our work with theirs.

Schuman and Harding (1963; 1964) hypothesized three attitudinal components: sympathetic identification with the underdog, justice, and rationality. Sympathetic Identification with the Underdog, as embodied in their Reactions test, is assessed by estimates of reactions of minority group members who have been subjected to derogatory treatment. One of several alternatives portrays the minority group member as hurt or angry; this is scored as a sympathetic or empathic answer. Justice, measured by their Social Problems test, consists of descriptions of discriminatory acts. The respondent records his reaction to these acts in terms of both social policy and personal practice. Rationality is tapped by the Paired Generalizations test; in each item the respondent must choose between a pair of statements. In some pairs one alternative allows him to be irrationally unfavorable to members of a given minority group ("generalizations anti"). In others, one alternative allows him to be irrationally favorable ("generalizations pro").

The Harding-Schuman version of these measures contained items applying to a number of minority groups. Since we were working with Negro items only we changed some items so that they referred to Negroes rather than to the group about which they had been originally written.[4]

Procedure and Subjects. The revised inventory plus the three modified Harding-Schuman measures were administered as part of a battery of measures of "opinions and attitudes on a variety of social issues." The subjects were 609 white college students of U.S. citizenship from two geographical regions, the midwest and the border South. Most were tested in or recruited through large introductory college courses such as engineering orientation, English and psychology. A representation of anti-Negro opinion was assured by recruiting through two Southern fraternities which had openly opposed integration. Some subjects were tested in class and others were paid for participation in two one-hour testing sessions outside of class.

Analysis. Two analyses were carried out using Tryon's multivariate analysis computer program, BCTRY (Tryon & Bailey, 1966).

First, the inventory items alone were analyzed; and second, the inventory and Harding-Schuman items together were analyzed. In both cases a principal axes solution with a verimax rotation was carried out. Instead of confining the factor structure to seven dimensions as in Study A, the number of dimensions was limited by the communality exhaustion criterion of .95. In the diagonal of the correlation matrix were the highest absolute correlations of each item with all other items. For the second analysis, that encompassing the total set of inventory and Harding-Schuman items, the factor analysis was supplemented by a cluster analysis.

e. Study C

The first objective of Study C was to continue our investigation of the components thus far identified and to explore other leads which grew out of Study B. A second objective was to determine the reliability and validity of each component.

In the Collins-Haupt work and in Studies A and B several factors had consistently emerged. In the present study the item content which best defined these factors was included in another revision of the inventory. As in Study B our goal was to further verify and, where necessary, extend the length of the various item clusters in order to have available homogeneous subscales of about 10 items each. Accordingly, new items were composed. Some of these were suggested by the content of Harding-Schuman items which in Study B had had strong loadings on factors which had remained stable throughout our work.

In addition to those items where there was a clear factorial overlap between our inventory and the Harding-Schuman measures, there were three distinct subsets of items unique to the latter. One of these sets was a subgroup of items referring to the issue of private rights in integration situations; such items were found in the Social Problems measure, but not in our inventory. All these items were rewritten in the format of the inventory. A second set of items representing empathic reactions to mistreatment of Negroes, as measured by the Reactions test, were not assimilated into the inventory because the items can not be adapted to the agree-disagree format. Instead the original Reactions format was retained and additional items were written to extend this questionnaire to 13 items. A third set of items was found in the Paired Generalizations measure. These items are among those which Harding (1962) calls "pro-Negro generalizations". We did not attempt to assimilate these items into the inventory because, like the Collins-Haupt "overfavorableness" factor, they have been shown to have little value as a measure of attitude toward Negroes (see details in Woodmansee & Cook, 1965).

Several respondents to the inventory suggested that we had overlooked an important aspect of attitude toward Negroes, namely, whether the process of desegregation should be carried out rapidly

or gradually. This led us to hypothesize a "gradualism" factor and to include items reflecting this issue in the revised inventory. The final form of this revision included 145 items.

Subjects. The subjects were 630 white college students of U.S. citizenship from schools in two border south cities and two western states. Of the 630 subjects, 313 were chosen for their participation in groups which might be expected to have a majority of members holding a specified attitude toward Negroes. We regarded these subjects as criterion groups against which to assess the validity of our attitude dimensions. The groups and the assumptions about their members' attitudes are listed below:

Group I: Subjects assumed to have strongly equalitarian attitudes and to be actively concerned with race relations (e.g. CORE, NAACP, race relations councils).

Group II: Subjects assumed to have equalitarian attitudes but not the active concern of Group I. Students who voluntarily expose themselves to attitude-related issues in elective race relations classes fit this description.

Group III: Subjects assumed to have somewhat anti-Negro attitudes but not to be actively concerned with questions of race relations. Groups having a high proportion of members of this type are hard to identify. An earlier study by Selltiz and Cook found a higher proportion of moderately or extremely anti-Negro subjects in right-wing political organizations than in other student groups; therefore, subjects for Group III were recruited from these organizations (e.g. Young Americans for Freedom).

Group IV: Subjects assumed to be anti-Negro and to be actively concerned with race relations. Social fraternity groups which had recently gone on record on their campuses as being opposed to inclusion of Negroes in their membership were solicited as respondents in this study.

All of these subjects were paid for their participation in the study.

The remaining 317 subjects were persons whose attitude toward Negroes was unknown. Of these 107 were from a school in a southern city and were solicited by means of newspaper ads for subjects offering money for participation in two hours of "opinion testing." The remaining 210 subjects were unpaid volunteers from Introductory Psychology at the University of Colorado. All 630 subjects completed the revised inventory, but only the non-criterion group subjects completed the Reactions test.

Analysis. Tryon's comulative communality key cluster analysis (CC5 portion of the BCTRY computer system) was used to explore the

structure of the 145 items in the revised inventory and the 13 items in the Reactions test. Since BCTRY is limited to 120 variables in a single run, two runs with overlapping items were required. After comparing the results of runs 1 and 2, a third run was made in which only those items were used which appeared to define the various factors in runs 1 and 2.

As the first step in assessing the validity of the item subgroups or "clusters" as potential scales of attitude toward Negroes we cluster-scored the responses of the 317 criterion group subjects. Cluster scores were based on those ten items (five "+" keyed, five "-" keyed) which best defined each of the 10 dimensions in the inventory. By items "best defining" a cluster, we mean those items which either have consistently clustered with the same items in previous analyses, or in the case of new items, have clearly shown that they are useful representatives of the stable factors in the present analysis. The cluster scoring was done in a simple additive manner, with the cluster score being increased by one point for each item which elicited a pro-Negro or equalitarian response from the subject. The range of scores on each cluster thus was 0-10. For each cluster an analysis of variance was done across criterion group levels. In order to compare the relative usefulness of the ten clusters as scales of prejudice, two relatively simple indices of cluster discrimination were employed. One index is the ranking of the correlation ratio, eta, the magnitude of which we estimated from the F ratio. Eta indexes the subscales' ability to predict the criterion of attitude group membership. This ranking was done for each geographic region separately since it was expected that the discriminatory ability of the scales might be region-specific. While the ranking of eta's provides a way of judging how the subscales compare with each other as measures of prejudice, it does not show the magnitude of intra-scale differences between the scores of anti-Negro subjects and equalitarian subjects. To show this we computed the difference between the largest and the smallest mean.

Using the responses of the 317 criterion group subjects, the internal consistency of each item cluster was also computed.

f. Results

The results of the series of studies described above make it possible to identify ten distinct content dimensions within the various revisions of the inventory. Five dimensions, first isolated in the Collins-Haupt study, have appeared in each of our subsequent analyses. These are listed below with an illustrative item:

Integration-Segregation Policy, i.e., the respondent's position on the propriety of racial segregation and integration. "The Negro should be afforded equal rights through integration." Collins and Haupt labeled this dimension Militant Integration.

Acceptance in Close Personal Relationships, i.e., personal willingness to recognize, live near, or be associated with Negroes.

"I would not take a Negro to eat with me in a restaurant where I was well known." This is the dimension which Collins and Haupt called Residential-Personal Social Distance.

Negro Inferiority, i.e., assertions which imply or directly state that Negroes are inferior to whites in terms of motivation, character, personal goals, and social traits. "Many Negroes should receive a better education than they are now getting, but the emphasis should be on training them for jobs rather than preparing them for college."

Negro Superiority, i.e., attributing to Negroes personal characteristics which make them superior to whites. "I think that the Negroes have a kind of quiet courage which few whites have." Collins and Haupt called this Overfavorableness.

Ease in Interracial Contacts, i.e., social ease in interracial situations in which a majority of whites probably would feel self-conscious or uncomfortable. "I would probably feel somewhat self-conscious dancing with a Negro in a public place." The Collins-Haupt label for such items was Denial of Ambivalence.

A dimension that we call Derogatory Beliefs was uncovered in Study A and has reappeared in our subsequent studies. The items reflecting this dimension are of two types. One says that Negroes are backward in a social, moral or educational sense, e.g., "Although social equality of the races may be the democratic way, a good many Negroes are not yet ready to practice the self-control that goes with it." The other disapproves Negro social behavior in relation to whites, e.g., "Some Negroes are so touchy about getting their rights that it is difficult to get along with them." Both types of items characterize at least some Negroes as being prone to a variety of relatively minor shortcomings. The items, for the most part, are essentially true and reasonable statements of everyday fact, but in tone they may be taken as subtly degrading and derogatory judgments against Negroes in general.

In Study B three additional dimensions emerged and were replicated in Study C. One dimension we call Local Autonomy because the items defining it pit the policy-making prerogatives of local collectives against the prerogatives of those outside the collective to guarantee the Negro's civil rights, e.g., "Even though we all adopt racial integration sooner or later, the people of each community should be allowed to decide when they are ready for it."

In Study B a second new dimension was found in Harding and Schuman's Social Problems scale, and has been termed Private Rights. This has to do with the individual rights of businessmen, club members, landlords, etc. who oppose integration on the basis of their individual rights of free association or choice of clients, e.g., "A hotel owner ought to have the right to decide for himself whether he is going to rent rooms to Negro guests."

The third dimension found in Study B concerns the respondent's acceptance of Negroes in positions where they are in authority or are socially superior to whites; thus the designation Acceptance in Status-Superior Relationships. An example is: "If I were being interviewed for a job, I would not mind at all being evaluated by a Negro personnel director."

The tenth dimension found in this series of studies refers to how rapidly the process of integration should take place. The dimension was first studied in Study C and has been labeled Gradualism. An illustrative item is "Gradual desegregation is a mistake because it just gives people a chance to cause further delay."

g. Validity and Homogeneity of the Subscales

Table 1 gives the analyses of variance of subscale scores of criterion groups within each geographical region. F ratios are significant beyond the .01 level in all cases. Due to the heterogeneity of variance among the criterion groups the accuracy of the determination of probability levels is questionable. However, the size of mean differences and the regular progression, in most cases, of mean scores from the most equalitarian to the most anti-Negro group adds confidence to the conclusion that the differences are significant.

Also provided in Table 1 is Cronbach's (1951) coefficient alpha, an index of subscale homogeneity. As may be seen, the subscales have adequate internal consistency although Negro Superiority, Negro Inferiority, Derogatory Beliefs, and Ease in Interracial Situations are somewhat less homogeneous than the others.

Table 2 shows the relative discriminatory power of the subscales as measures of attitude toward Negroes. They are ranked in terms of the size of eta for each region.

h. Work Proposed

Based upon the work done to date we have made available a self-report attitude inventory (called Multifactor Racial Attitude Inventory) for general use in attitude assessment and attitude change studies. The first 60 items make up a short form highly correlated with the score based on the total inventory. The long form is based upon 90 items. In addition there is a research subscale of 10 items (i.e., Negro superiority) on which we hope eventually to base a correction for representing one's self as more favorable than is, in fact, the case. The 90-item inventory is itself made up of nine 10-item subscales. This inventory is now being used by a number of investigators in their own research projects. A test manual has been prepared for their use.

While I do not intend to give high priority to further work on this inventory, I will follow it up as the occasion permits itself.

Recent work has suggested that there are probably two additional clusters of items which we do not have represented. One of these clusters represents a dimension ranging from the belief that the Negro's status must be improved through education to a belief that his status can only be improved through changes in social legislation. The second cluster has to do with beliefs about racial intermarriage ranging from approval and convictions that the outcome would be advantageous to disapproval on both moral and practical grounds.

New items representing these two clusters will be added to the inventory. Data will be collected in the course of research dealing primarily with other matters. When sufficient data become available we will again factor analyze the items in an effort to determine whether the inventory should be extended from the present 10 subscales to 12 subscales.

Table 1

Homogeneity of Subscales and Analyses of Variance of Subscale Scores of Criterion Group Subjects, by Region

Subscale	Homogeneity	Criterion Level	Western[a] $\bar{X}$[c]	Western[a] s.d.	Border South[b] $\bar{X}$	Border South[b] s.d.
Integration-Segregation Policy	.92	I	9.82	0.39	9.80	0.72
		II	9.49	1.46	7.92	2.84
		III	6.46	3.60	4.00	2.94
		IV	7.41	2.79	5.11	3.40
			F=17.85**		F=33.72**	
Acceptance in Close Personal Relationships	.93	I	9.73	0.46	9.49	1.09
		II	8.37	2.85	5.00	3.82
		III	6.49	3.71	3.26	2.88
		IV	6.15	2.87	2.39	2.76
			F=11.19**		F=49.98**	
Negro Inferiority	.79	I	9.18	1.01	8.97	1.15
		II	8.47	1.48	7.56	2.12
		III	6.83	2.67	5.66	2.17
		IV	6.76	2.12	5.02	2.82
			F=14.07**		F=24.90**	
Negro Superiority	.77	I	3.00	2.35	3.29	3.27
		II	1.60	2.12	2.88	2.88
		III	1.29	1.30	1.53	1.70
		IV	2.11	1.72	1.16	1.55

Table I (con't)

Subscale	Homogeneity	Criterion Level	Western[a] $\bar{X}$[c]	Western[a] s.d.	Border South $\bar{X}$	Border South s.d.
			F=4.35*		F=6.89**	
Ease in		I	7.18	1.92	4.91	2.64
Interracial		II	2.54	2.20	1.76	2.09
Contacts	.80	III	1.77	1.50	1.29	1.31
		IV	1.43	1.15	1.23	1.67
			F=56.67**		F=29.41**	
Derogatory		I	7.18	1.37	7.03	1.84
Beliefs		II	5.41	2.30	4.28	2.09
	.78	III	3.00	2.00	1.66	1.66
		IV	2.89	1.83	2.18	1.54
			F=33.75**		F=70.85**	
Local Autonomy		I	9.32	0.84	8.89	1.64
		II	7.04	3.09	6.08	3.59
	.90	III	2.89	2.88	2.42	1.97
		IV	4.89	2.90	2.43	2.38
			F=30.12		F=63.34	
Private Rights		I	8.68	0.99	7.97	1.85
		II	5.99	3.52	4.12	3.24
	.92	III	0.83	1.36	1.63	2.14
		IV	3.17	3.00	1.05	1.71
			F=45.17**		F=76.63**	

Table 1 (con't)

Subscale	Homogeneity	Criterion Level	Western[a] $\bar{X}$[c]	Western s.d.	Border South $\bar{X}$	Border South s.d.
Acceptance in		I	9.96	0.21	9.80	0.53
Status-Superior		II	9.15	1.66	7.96	2.49
Relationships	.90	III	7.60	3.26	5.63	3.20
		IV	7.63	2.52	5.09	3.41
			F=9.25**		F=23.40**	
Gradualism		I	7.45	2.86	7.00	2.62
		II	4.32	3.38	3.36	3.53
	.90	III	1.00	1.46	1.18	1.72
		IV	2.39	2.41	1.00	1.48
			F=29.13**		F=53.90**	

[a] N for each criterion level: I=22, II=68, III=35, IV=46; and df = 3 X 167 for all Western region analyses.

[b] N for each criterion level: I=35, II=25, III=38, IV=44; and df = 3 X 138 for all border South analyses.

[c] The greater the mean score the more equalitarian the attitude.

* Significant at .01 level.

** Significant at .001 level.

Table 2

Discriminating Effectiveness of the Various Subscales as Indicated by Eta and the Maximum Difference between Criterion Group Means

Rank (eta)	Western Subscale	Western Eta[a]	Western Max. Diff. in Means	Border South Subscale	Border South Eta	Border South Max. Diff. in Means
1	Ease in Interracial Contacts	.71	5.8	Private Rights	.79	6.9
2	Private Rights	.67	7.9	Derogatory Beliefs	.78	5.4
3	Derogatory Beliefs	.61	4.3	Local Autonomy	.76	6.5
4	Local Autonomy	.59	6.5	Gradualism	.74	6.0
5	Gradualism	.58	6.4	Acceptance in Close Personal Relationships	.72	7.1
6	Integration-Segregation Policy	.49	3.4	Integration-Segregation Policy	.65	5.8
7	Negro Inferiority	.45	2.4	Ease in Interracial Contacts	.62	3.7

Table 2 (con't)

Rank (eta)	Western Subscale	Eta[a]	Max. Diff. in Means	Border South Subscale	Eta	Max. Diff. in Means
8	Acceptance in Close Personal Relationships	.41	3.6	Negro Inferiority	.59	4.0
9	Acceptance in Status-Superior Relationships	.38	2.4	Acceptance in Status-Superior Relationships	.58	4.7
10	Negro Superiority	.27	1.7	Negro Superiority	.36	2.1

[a] Estimated from the F ratio

B. Susceptibility of Multifactor Racial Attitude Inventory to Faking

A study of the susceptibility of self-report attitude items to "faking" was carried out on 154 Ss. The first version of the self-report inventory described above was used in this study.

Responses to the attitude items showed marked shifts between administration under standard instructions and administration under instructions to make a good impression. This means that, as we had expected, the direct attitude inventory can easily be "faked."

Examination of the responses under the "fake good" instructions showed that there is among the usual college population (at least in the midwest) a clear norm that the socially acceptable attitude toward Negroes is one of lack of prejudice. In addition, moreover, acceptance of Negro Superiority items also went up under "fake good" conditions. In other words, among college students the socially acceptable norm for unprejudiced behavior includes the picture of the unprejudiced person as one who says that Negroes as a group are better in some respects than white persons as a group.

C. Empathic Reactions

a. Background

The recent work of Harding & Schuman presents a theoretical conceptualization of the nature of prejudice. According to these investigators prejudice is conceived as a failure on the part of an individual to achieve norms of justice, sympathetic identification with the underdog, and rationality. Justice is conceived as having concern for the rights of all people in society. Sympathetic identification with the underdog is conceived as concern for the feelings of others or of having empathy for them. Rationality is conceived as recognizing the validity of arguments relatively unaffected by one's own feelings.

Harding and Schuman have prepared measures of each of their proposed dimensions, incorporating items having to do with a variety of ethnic groups.

b. Purpose

The Harding and Schuman work constitutes the major contemporary empirical investigation of the components of social attitudes other than the program of the present investigator. Hence, as noted in the discussion of the MRAI above, it seemed highly desirable to examine the relationship between the measures growing out of their program and the self-report measures originating in this program. For this reason we have included their most promising instruments in a test battery used with a very large number of Ss in three regions of the country. As already noted, this has permitted both a study of the factors or components involved in the instruments and an exploration of their validity against criterion groups differing in racial attitudes.

c. Study A

Development of Materials. In order to develop a form of the test dealing only with racial attitudes, we took from the larger inventory which Harding & Schuman call "Reactions" only those items having to do with sympathetic identification with Negroes. There were ten such items in multiple choice form. Each item presents a situation that confronts a Negro and S indicates what the feelings of the Negro in the situation is likely to be. Example: A Negro is called "boy" or "Black Sambo" by his superintendent. Answers that S can choose range from non-committal types of responses such as, "the story doesn't give enough information," through indifferent types of responses as, "he is likely to have become used to it," through responses that the Negro is pleased with his lot as in "he may well regard it as a friendly, informal way of speaking

to him," to sympathetic identification with the Negro in a response such as, "he probably resents it."

Data Collection. In the first part of the study aimed at collection of material for factor and cluster analyses, the Empathic Reactions test was administered along with the Multifactor Racial Attitude Inventory and other Harding-Schuman instruments to 609 Ss in the Rocky Mountain area and the border South. (See Study B under section on the Multifactor Racial Attitude Inventory). In the second part of the study it was administered to 534 Ss in criterion groups in three regions of the country--241 in the Northeast, 199 in the Rocky Mountain area and 94 in the border South.

Data Analysis. Both factor and cluster analyses show the empathic reaction items to form a distinguishable subscale. Seven items show satisfactory factor and cluster loadings. While the factor represented by these items is intercorrelated with other factors, the correlations are relatively low.

The study of the relationship between empathic reactions and attitude as indicated by membership in criterion groups, gave quite encouraging findings. The relationship was highly significant in all three regions, .45 in the Northeast, .38 in the Rocky Mountain area and .73 in the border South (eta coefficients). While except for the border South these relationships are not particularly high, it will be recalled that these items are not highly correlated with other self-report attitude items. This fact opens up the possibility that they might serve as efficient components of a prediction battery.

d. Study B

A 13 item version of the Harding and Schuman Reactions Test (limited to Negro items) measuring sympathetic identification with the underdog was included in a second study. (See Study C under the section on Multifactor Racial Attitude Inventory). It was administered to 317 subjects and included in an item cluster analysis with 145 items of the type used in the Multifactor Racial Attitude Inventory. This analysis confirmed the fact that these items represent a distinguishable cluster or factor. This finding plus the validity data available from Study A has led us to recommend the use of the modified version of the test in conjunction with the Multifactor Racial Attitude Inventory when self-report attitude measures are desired. We have made this modified version of the Reactions Test available along with the Multifactor Racial Attitude Inventory and the accompanying Test Manual.

e. Work Proposed

No further work is contemplated on this instrument in the immediate future. A satisfactory set of items is now available and will be used in the future only when we are investigating the interrelationships of indicators shown to be related to attitude as indicated by criterion group membership. Also, in the event that further analysis of the factor structure of self-report measures of attitude is undertaken, this scale will be included.

D. Reactions to Discriminatory Practices

a. Background

This study is based on the work of Harding and Schuman, discussed in this report under the Multifactor Racial Attitude Inventory and under Empathic Reactions, and represents their "justice" dimension. Their name for the test involved is Social Problems.

b. Purpose

Our purpose in using the Harding-Schuman measures has been given in the earlier discussions.

c. Study A

Development of Materials. This instrument, as Harding and Schuman used it, covered a variety of minority groups. We selected only the five items referring to Negroes. Each presents a social situation involving Negroes and whites. To each of these situations three responses are required. Example: A Negro enters a barbershop, is refused service and told to go to the barbershop that serves Negroes. The three questions asked of S are (1) "Should the head barber have been willing to give the Negro a haircut?," (2) "Is it all right for some barbershops to refuse to serve Negroes?," and, (3) "Would you mind going to a barbershop that refused to serve Negroes?" As in this example, each item raises the integration-segregation policy issue in the abstract and asks the S what action he would take in the situation as well as what he thinks of the behavior of the persons described as participating in the discriminatory action.

Data Collection. The data collection for these items is identical with that already described for the Empathic Reactions items (see Study A under section on Empathic Reactions).

Data Analysis. The factor and cluster analyses show that a number of the items in this set are quite similar to those in the Multifactor Racial Attitude Inventory which define the integration-segregation factor. Items from the Harding-Schuman group having to do with integration of schools and other public facilities form a cluster with similar items from the Multifactor Inventory.

Another group of items from the Reactions to Discriminatory Practices form a cluster of their own. The characteristic of this set of items is that it appears to pit private rights against the values of integration. A typical item is as follows: "Is it all right for a private tennis club to refuse to admit Negroes?" To make clear the difference

between this group of items and the integration-segregation factor above, note than an item which appears there is "Is it a good idea to have separate tennis clubs, bowling leagues, and so on for whites and Negroes?" In the latter case, the integration question is raised in isolation from the rights of a private social club.

A study of the relationship of the Harding-Schuman Social Problems items and racial attitude as indicated by membership in criterion groups gave highly significant results. Correlations were high in all three regions, .64 in the Northeast, .53 in the Rocky Mountain area, and .86 in the border South (eta coefficients).

d. Work Proposed

It proved to be possible to convert items from the Social Problems test to the agree-disagree form of the Multifactor Racial Attitude Inventory. This conversion was undertaken with some of the integration-segregation policy items in order to broaden the integration-segregation factor in that Inventory.

In addition, the items which contrasted private rights of persons with the values of integration were also converted. As might be predicted from this study, they formed a new item cluster in the cluster and factor analyses conducted later and are now part of the current version of the MRAI.

Since our work on self report attitude items has already profited fully from the Reactions to Discriminatory Practice test we plan no further work with it.

E. Derogatory Beliefs

a. Background

This is one of two parts of a Harding and Schuman measure which they called Paired Judgments. Together with the test described in Section F below, it attempts to measure their rationality dimension. Their general conceptual scheme has been described in the section above on Empathic Reactions.

b. Purpose

Our purpose in using the Harding-Schuman measures has been given in the discussion of the Empathic Reactions items.

c. Study A

Development of Materials. The Harding-Schuman instrument covered a variety of minority groups. We limited ourselves to the racial items. This gave us eight pairs of statements to which S responds by choosing the "more correct" of the two. S then indicates whether he is not very, moderately, or very sure of his choice. Example: Statement A - "In general, Negroes who have openly opposed segregation in the South have shown unusual self-restraint and courage." Statement B - "It takes no special virtue for Negroes to oppose segregation openly in the South." In this case the choice of Statement B contributes to the anti-Negro generalizations score; the amount of the contribution depends upon the certainty with which S indicates he is sure of his choice.

Data Collection. The data collection for these items is identical with that already described for the Empathic Reactions items (See Study A in the section on Empathic Reactions).

Data Analysis. The factor and cluster analyses show that these items are most similar to the Negro inferiority items of the Multifactor Racial Attitude Inventory. However, the factor loadings are not high. Some of the items are found with other factors; this apparently is a consequence of the nature of the item content.

The study of the relationship between this part of Harding and Schuman's Paired Judgments Scale and attitude as indicated by membership in criterion groups showed clear and significant results. The correlation was substantial in all three regions, .41 in the Northeast, .52 in the Rocky Mountain area and .76 in the border South (eta coefficients). As

noted above, these items are not homogeneous and if used further in a prediction battery should probably be incorporated as components of other subscales.

d. Work Proposed

No further work is contemplated on these items in the immediate future.

F. Pro-Negro Generalizations

a. Background

These items constitute the second part of the Harding-Schuman Paired Judgments test. They differ from the items discussed above in that one of the statements of the pair is intended to represent an unrealistically favorable generalization about Negroes.

b. Purpose

Our purpose in using the Harding-Schuman measures has been given in the discussion of the Empathic Reactions items (See Section C above).

c. Study A

Development of Materials. From the larger Harding-Schuman test covering a variety of minority groups, we selected the seven item-pairs which deal with Negroes. S responds by choosing the "more correct" statement of the two in the pair. S then indicates whether he is not very, moderately, or very sure of his choice. Example: Statement A - "The percentage of children born to unmarried mothers is higher among Negroes than among white people." Statement B - "The percentage of children born to unmarried mothers among Negroes is about the same as among white people." The choice of statement B in this item represents an unrealistically favorable generalization; the size of the score received by S depends upon the certainty with which he indicates he has made his choice.

Data Collection. The data collection for these items is identical with that already described for the Empathic Reactions items (See Study A in the section on Empathic Reactions).

Data Analysis. When factor analyzed together with MRAI items most of the items from the favorable generalizations section of the Paired Judgments test form a distinguishable subgroup of their own. These items have the characteristic that they assert equivalence of Negro behavior to white behavior in areas where the facts are clear to the contrary (the Negro's less adequate performance presumably being due to the influence of low socio-economic status). Examples are the assertions that the proportionate frequency of illegitimacy and murder is no higher among Negroes than among whites. These items differ from the Negro Superiority subscale of the Multifactor Racial Attitude Inventory in that the latter assert the superiority of Negroes as a group.

The study of the relationship between this part of the Paired Judgments scale and attitude as indicated by membership in criterion groups gave statistically significant findings, but of lower magnitude than is true of the other tests in the Harding-Schuman group. The eta coefficients obtained in the three regions are as follows: .35 in the Northeast, .18 in the Rocky Mountain area, and .60 in the border South. In this respect these items behave in a similar fashion to the Negro Superiority items of the Multifactor Racial Attitude Inventory where the correlations with attitude as indicated by criterion group membership were also low.

d. Work Proposed

We hope to go ahead with an exploration of a "correction" subscale to correct self-report attitude scores for distortion due to considerations of social desirability. It appears that the type of items represented by the Harding-Schuman pro-Negro generalizations might be a candidate for inclusion in such a correction score. As yet we have devised no approach to the validation of a correction score in which we have confidence.

G. Interviews

a. Background

Work on interviewing has established the fact that respondents' answers may differ according to the interviewer's characteristics and behavior. It seems likely that in the area of social attitudes many respondents will assume that the interviewer approves of unprejudiced views and the respondents may therefore try to appear unprejudiced.

b. Purpose

We started from two assumptions: (1) that one of the major probable extraneous influences on responses to interview questions is the individual's wish to present a certain picture of himself, either to impress the interviewer favorably or to protect his own self-image; and (2) that when the interviewing is done under academic or other "respectable" auspices, most subjects will assume that the responses which will present them in the most favorable light are those which represent them as well-adjusted, tolerant, rational, open-minded, democratic. Thus we are working with interviewing techniques designed to make it easier for the individual to reveal himself as not well-adjusted, not tolerant, etc., or to make it harder for him to portray himself, falsely, as well-adjusted, tolerant, etc.

Specifically, with respect to attitudes toward social groups (racial, religious, or national), we planned two approaches: one in which it is emphasized that experts differ in their views on the questions being asked, and one in which the questions assume that the respondent holds certain negative views toward the object. In the first approach, for example, when the attitudinal object is Negroes, the introductory statement to one section of the interview might run:

> "The Southern Regional Council, a bi-racial organization interested in improving Negro-white relations in the South, found in November, 1958, that the main barrier to Negro voting was not intimidation, but apathy. However, another recent study reports, "Violence, terror and intimidation have been, and still are, effectively used to disfranchise Negroes in the South."

The thought here is that such a statement carries the implication that there are well informed and respectable people who hold negative views about Negroes (in this case), and thus makes it easier for the respondent to express any such views that he may hold.

In the second approach, a typical question might read: "What would be your objections to being treated by a Negro doctor?" This, of course, is similar to Kinsey's approach of asking, not "Have you ever. . . .?," but "When did you first . . . .?" or "How often do you . . . . ?" The question tacitly assumes that people hold certain negative views and thus presumably makes their expression easier. The respondent

who does not hold these views can reject the question. Early exploratory work suggested that this second approach offered more promise and led to the studies reported in the pages to follow.

c. Pilot Study A

Development of Materials. Questions were worded in such a way as to make the interviewer sound anti-Negro. The purpose of this, as noted, above, was to make it easier for the subject to reveal such anti-Negro views as he might have. This was accomplished in two ways. One of these was to have the interviewer precede the question by stating an anti-Negro premise. The second was to have an interviewer ask a leading question which presumed an anti-Negro answer. An illustration of both of these procedures is given below.

> The civil rights movement has caused quite a lot of disfavor, particularly the pickets and demonstrations. A lot of times the demonstrations don't have any actual connection with the situation--for example, take the sit-ins at the White House and other federal building around the country over things that are happening in the South. Don't you think that things like that do more harm than good to the cause of the Negro?

The interview was presented to the research subjects as a public opinion survey of college students. Of the 32 questions in the interview 15 dealt with race relations. The remainder were questions about high interest topics such as the war in Viet Nam, capital punishment, communism, etc. The 15 questions related to race relations were spaced throughout the interview. Considerable attention was given to developing "question contexts" such as urban housing. Within such a question context questions unrelated to race relations were asked first after which came the questions involving race. The latter appeared to flow naturally from the over-all context.

The sub-areas of race relations from which questions were chosen were determined in large part by the factor studies of attitude items carried out in connection with development of the Multifactor Racial Attitude Inventory.

Interviewers were trained to use this type of question and preliminary work was carried out to determine whether or not the technique could be used in a standardized manner. Experience indicated that it could.

After a number of interviews had been administered and tape recorded, an attempt was made to develop scoring categories for each question on a five-point dimension ranging from very unfavorable to very favorable toward Negroes. This effort made it clear that some of the questions needed revision and that most of them needed additional standard probes to clarify types of answers which otherwise would be uncodable.

Data Collection. This first pilot study concentrated on subjects whose attitudes were in the "middle range." It made the assumption that such persons, by contrast with those with extreme attitudes, are more influenced in their responses to questions by their expectations of what might be approved by other persons (such as interviewers).

The question raised in the study was whether respondents would give more anti-Negro answers to the slanted interview questions than would comparable persons answering unslanted questions. In order to make this comparison it was necessary to prepare a "straight" form of the interview using unslanted questions dealing with identical topics.

Subjects were chosen for the study on the basis of their scores on a self-report attitude inventory (the Multifactor Racial Attitude Inventory). Only those subjects were used who fell between plus or minus one sigma of the mean of University of Colorado students on this inventory. Students within five points of each other in score were constituted as pairs, one being interviewed with the slanted interview and one with the straight interview. Members of a pair were of the same sex and were interviewed by the same interviewer. Nine pairs of subjects were interviewed. All interviews were tape recorded.

Data Analysis. Each interview was coded by two judges. Because of the pilot character of the study no attempt was made to obtain coders who were naive with respect to the question being asked in the experiment. The coders were trained to anticipate the "halo" effect of answers given on earlier questions on the perception of answers given to later questions. Intercoder reliability was high.

Results. The interview results were analyzed question by question. Of the 15 questions related to race relations nine gave more anti-Negro answers on the slanted interview than on the straight interview. On the remaining questions little or no difference between the two interviews was obtained. In a number of cases the lack of difference was due to the fact that all subjects gave equalitarian answers regardless of the interview form. We concluded that the slanted interview showed enough of a tendency to produce the predicted results to make it worthwhile to conduct a second study.

d. Study B

The purpose of this study was to carry further the development of the "slanted" interview on which exploratory work was done in Pilot Study A. One objective was to determine the degree to which subjects were consciously aware of the deliberately biased character of the interview. A second was to improve the interview by eliminating questions which had not differentiated between the "slanted" and "straight" forms of the interview in the pilot study. A third was to make both a broader and more intensive study of the impact of the slanted questions upon subjects' responses than had been possible in the pilot study. Specifically, in this study, the comparison of slanted and straight interviews was broadened beyond students with middle-range

attitudes to those with strong equalitarian and strong anti-Negro attitudes as well.

Subjects' perception of the interview and the interviewer. The original interview was administered to ten subjects in order to determine the extent to which they might be aware of the biased character of the introductory premises preceding the questions and the questions themselves. Following the interview the subjects were asked for their impression of the interviewer's own position on several of the major issues covered in the interview, including the race relations issue. The subject was also asked about his impressions of the way the questions were worded, "Were they fair and objective or did you think them unclear or perhaps biased in one direction or another?" No subject indicated that he thought the interview to be anti-Negro nor the questions to be biased. If we take this information at face value we may conclude that the subjects were not consciously aware of the nature of the interview. This is a promising finding since it reduces the likelihood that any effect of the slanted interview upon the subjects' answers would be outside of awareness -- i.e., not due to a conscious adjustment on his part to the "slant" built into the interview.

Revision of items. Questions which had not contributed to the differences found between the slanted and unslanted interview forms in the pilot study were either revised or eliminated. These questions were of two types. One dealt with topics on which opinion was so uniform and conviction so strong that responses were apparently not influenced by the question form. Such questions were eliminated. Another type involved a "projective" principle; the subject was asked why some specified group of people reacted to Negroes or to Civil Rights legislation in a hostile manner. We had assumed that the slanted interview form might cause subjects to interpret such people as more anti-Negro than did the unslanted form but this turned out not to be the case. In the revision the focus of such questions was changed to apply directly to the subjects' own views.

Development of coding categories and standardization of probes. After we had arrived at a final form of the interview, coding categories were developed. The answers to each question were arranged on a five-point continuum from most anti-Negro to most equalitarian. The 35 interviews given during the work on question revision were examined for illustrative answers. Additional probes were formulated where necessary to clarify the subject's position when his original answer was ambiguous or off the main point. In addition, the first twenty interviews from the current study were also examined for the purpose of further standardizing the coding categories.

Data collection. As in Pilot Study A, the principle objective of Study B was to compare the responses to unslanted and straight interviews given by matched pairs of subjects. As noted earlier the subjects were to include an anti-Negro group and an equalitarian group as well as a middle-range group. A total of sixty subjects were interviewed, twenty

in each of these three subgroups. Subjects were identified by means of a self-report attitude inventory (Multifactor Racial Attitude Inventory) given by another experimenter in a different setting than the one used for this study. For the equalitarian group favorable students available were used; all were more than one standard deviation above the mean score for University of Colorado students on this inventory. Similarly the most anti-Negro students available were used for the anti-Negro subgroup; each of them was one standard deviation or more below the student mean. The subgroup of students with middle-range scores were within a few points of the mean. Ten pairs of subjects were recruited for each subgroup. Each pair was of the same sex and within five points of one another on the MRAI inventory score.

The subjects were approached with the information that they were part of a randomly selected scientific sample being used in a public opinion survey. The interviewer did not know the attitude subgroup to which the subject belonged nor the identity of his paired counterpart.

Coding. Coding was carried out by two trained coders. Neither knew the purpose of the study. They knew nothing about the subjects whose responses they were coding. They were told that the two forms of the questions to which the subjects were responding represented an old and a new form of the interview. The intercoder reliability was .97 (Pearson r of total scores on thirty pairs of cases).

Results. Non-parametric tests (Friedman two-way analysis; Wilcoxsen matched pairs signed ranks) of the significance of differences between scores obtained with the two forms of the interview were carried out. For all pairs the interview scores were significantly more anti-Negro on the slanted interview (as expected) than on the unslanted (difference significant at $p < .10$ on the Friedman; at $p < .03$ on the Wilcoxsen). When the above analysis was repeated by attitudinal subgroups it developed that the effect is found among the more anti-Negro subjects and among the subjects with middle range attitude scores ($p < .05$ or better) but not among the more equalitarian subjects.

The failure to find an effect of interview form among the equalitarian subjects as compared to the success in demonstrating it among anti-Negro subjects may be accounted for by the relative extremity of attitude among the two groups. The equalitarian sub-group represents a rather narrow range of strongly convinced equalitarians. In the slanted interview they consistently reject the anti-Negro introductory premise and the implied expectation in the slanted question. Students in the anti-Negro sub-group on the other hand are more variable. The score range in this sub-group is twice that of the score range in the equalitarian sub-group. Moreover, one does not get the more extreme anti-Negro position well represented among Colorado undergraduates. We may assume that the attitudinal position in the (moderately) anti-Negro sub-group is less firm than in the (strongly) equalitarian subgroup and hence more susceptible to influence by slanted interview questions.

In order to determine whether some items contributed more than others to the over-all difference between the two types of interviews a comparison of results item-by-item was carried out. The distribution of scores obtained with the slanted interview form on a single question was compared for the total group of subjects with the distribution obtained with the unslanted form of the same question (chi square; Wilcoxsen matched pairs signed ranks). This analysis showed five of the 16 race relations questions producing significant differences at levels ranging from $p < .01$ to $p < .06$.

e. Study C

A replication of the study described above is in process using Southern college students as subjects. Data collection will be completed during the Fall of 1966.

f. Work Proposed

On the basis of our findings to date there seems little reason to doubt that interview form does have an effect upon the answers subjects give to race related questions. This effect is minimal or absent in the case of subjects whose degree of certainty about their attitudinal position is quite high. Within sub-groups whose members have less extreme attitudes some individuals show more of the influence of interview form than do others.

We have recognized from the beginning that such a finding would be susceptible to two interpretations. One of these is that under the slanted interview the subject is free of the strong equalitarian expectation created by the university setting and university-connected interviewers and is thus more free to describe his actual beliefs and feelings. However, the other equally plausible interpretation is that the subjects who receive the slanted interview are influenced by it in such a way as to give more unfavorable responses than are in truth characteristic of them. While we have no definitive way in which to choose between these two possibilities there are two types of studies which might throw some light on the question. One of these is a study in which measures of susceptibility to social influence are administered to the same subjects who receive the slanted interview. This would make it possible to ask whether subjects whose scores on the slanted interview are more anti-Negro than would be expected (from the scores of matched subjects on the unslanted interview) are also more susceptible to social influence as measured by tests of this characteristic. Such a finding would keep open the interpretation that scores on the slanted interview resulted from situational influences which distorted true attitudes rather than revealed them. However, since we must assume that it is equally likely that the socially susceptible person had had his MRAI inventory answers distorted in a favorable direction by the university setting in which he gave them, we cannot take such a finding as unambiguous.

The second type of study would test both the slanted interview, the unslanted interview and the self-report attitude inventory (MRAI) against a criterion of attitudinal group membership. This would make it possible to determine whether such a criterion could be better predicted by the slanted interview than by either the unslanted interview or the inventory alone.

I hope to carry out both types of studies in the near future.

H. Differential Social Distance

a. Background

Westie (1953) has developed a social distance questionnaire in which Ss are asked to rate their willingness to accept hypothetical persons described in terms of race and occupational status (e.g., "white janitor," "Negro banker") in various situations or relationships; the score is based on the difference between ratings of Negroes and whites of the same occupation in a given situation or relationship. Westie states that this instrument seems less susceptible than most self-report measures to distortion by the desire to give socially acceptable responses; presumably this is because the length and format of the test make it difficult for S to remember, for example, exactly how willing he indicated he was to accept a "white janitor" as a dinner guest when he comes to the item calling for a parallel rating for "Negro janitor."

b. Purpose

Our basic interest was to discover whether modifications in the test would make it less susceptible to influence by considerations of social desirability. Since the Ss were northern college students, we assumed that any lessening of the influence of social acceptability would lead to freer expression of avoidance of Negroes and thus to higher difference scores on the form of the test that was least susceptible to social acceptability influence.

c. Study A

Development of Materials. We modified the instrument in two ways: (1) by adding the attribute of religion to the hypothetical person; (2) by changing the format to make it harder for S to see the pattern of his ratings. Combinations of these modifications gave four forms of the test.

Data Collection. These tests were administered to 102 northern college students: 46 members of "liberal" organizations; 56 members of "extreme conservative" organizations. Two versions of the test were administered to each S, two weeks apart.

Data Analysis. The primary results were entirely negative. Scores did not vary as a function of the form of the test taken, nor was there any consistent relation between scores on the different forms and scores on several social desirability scales.

There were a few findings of secondary interest. First, intercorrelations of the forms (tetrachoric r) average .92, suggesting that they might be used as alternative forms should such a need arise. Second, a small number of Ss had sizable negative scores indicating greater acceptance of Negroes than of whites of parallel status. This was one of the observations that gave impetus to our interest in developing a subscale to be used as a correction for scores on self-report measures. Third, such differences as were found between the liberals and conservatives on the total test were due primarily to differences on two of the four subscales. These two contain items referring to residential and personal-social relationships. On the remaining two, dealing with the use of public accommodations and the holding of public positions, no differences were found. The suggestion is that among northern college students the pattern of racial separation (or, at least, of reported separation) is now concentrated on relationships which may be thought of as private or which may carry implications for one's social status.

d. Work Proposed

At the moment we see no advantage in working further with this technique.

I. Forced Choice Inventory

a. Background

Within the past decade, questionnaires requiring a choice between items matched for social acceptability have been used extensively in the measurement of personality (e.g., Edwards, 1957). However, relatively little use has been made of this technique in attempts to measure social attitudes. I have discovered one unpublished scale in which anti-Negro items from the Adorno F-Scale were paired with items derogatory to other minorities. This work was done by Reynolds while a graduate student at Michigan State. No data are given to indicate the extent to which the item pairs were matched for social desirability. Evidence is offered that students at Louisiana State University more frequently choose the anti-Negro statements than do students from Michigan State University.

We have studied intensively the literature reporting and reviewing the use of the forced-choice technique in the personality area. We find that the technique has come under serious attack in recent years, on the following grounds: the difficulty and perhaps impossibility of equating items for social desirability (e.g., Jackson, 1961; Merrick, 1960); little difference in the results of forced-choice questionnaires and traditional questionnaires (e.g., Travers, 1951); the frequency of negative and uncooperative reactions of Ss because of the difficulty, uncongeniality, and apparent unreasonableness of the task, leading to careless responses and thus to unreliability (e.g., Levonian et al., 1959). The first of these problems (that of devising items that are of equal social acceptability but of different import for attitude) seems especially severe in the case of social attitudes where there are clear norms of social acceptability.

b. Work Proposed

While I am not encouraged by the review of the literature to believe that the forced choice technique is promising in attitude measurement I do feel that it should be explored. To date it has sufficiently low priority that no plan of research has been developed. Exploratory work on the possibility of devising attitudinal items matched by social acceptability will be carried out when time and facilities permit.

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